

## ABSTRACT OF THE DISCLOSURE

A motion control system and method are disclosed which provide improved pulse  
5 placement for smoother operation of a motion device such as a stepper motor. A placement  
of pulses may be determined for each of a plurality of time intervals such that the pulses are  
placed evenly across the plurality of time intervals, wherein the quantity of pulses in each of  
the time intervals is variable. The pulses may be generated and sent to the motion device to  
move the object to the desired position. A delay may be used to place each pulse at an  
10 arbitrary location within one of the time intervals. Where the desired step rate is fractional,  
time may be "borrowed" for one loop iteration from other loop iterations. In one  
embodiment, the step rate may be changed from one loop period to the next.